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NEWS	3	APR 03	CAS coverage of exemplified prophetic substances enhanced
NEWS	4	APR 07	STN is raising the limits on saved answers
NEWS	5	APR 24	CA/CAPLUS now has more comprehensive patent assignee information
NEWS	6	APR 26	USPATFULL and USPAT2 enhanced with patent assignment/reassignment information
NEWS	7	APR 28	CAS patent authority coverage expanded
NEWS	8	APR 28	ENCOMPLIT/ENCOMPLIT2 search fields enhanced
NEWS	9	APR 28	Limits doubled for structure searching in CAS REGISTRY
NEWS	10	MAY 08	STN Express, Version 8.4, now available
NEWS	11	MAY 11	STN on the Web enhanced
NEWS	12	MAY 11	BEILSTEIN substance information now available on STN Easy
NEWS	13	MAY 14	DGENE, PCTGEN and USGENE enhanced with increased limits for exact sequence match searches and introduction of free HIT display format
NEWS	14	MAY 15	INPADOCDB and INPAFAMDB enhanced with Chinese legal status data
NEWS	15	MAY 28	CAS databases on STN enhanced with NANO super role in records back to 1992
NEWS	16	JUN 01	CAS REGISTRY Source of Registration (SR) searching enhanced on STN

NEWS EXPRESS MAY 26 09 CURRENT WINDOWS VERSION IS V8.4,
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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 10:09:16 ON 10 JUN 2009

=> file medline biosis caplus embase
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.22	0.22

FULL ESTIMATED COST

FILE 'MEDLINE' ENTERED AT 10:09:42 ON 10 JUN 2009

FILE 'BIOSIS' ENTERED AT 10:09:42 ON 10 JUN 2009
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=> s KURIHARA H?/AU
L1 3876 KURIHARA H?/AU

=> s l1 and periodon?
L2 290 L1 AND PERIODON?

=> s l2 and neurotroph?
L3 16 L2 AND NEUROTROPH?

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4 5 DUP REM L3 (11 DUPLICATES REMOVED)

=> s Kawaguchi H?/au
L5 5694 KAWAGUCHI H?/AU

=> s l5 and periodon?
L6 78 L5 AND PERIODON?

=> s l6 and neurotroph?
L7 12 L6 AND NEUROTROPH?

=> dup rem l7
PROCESSING COMPLETED FOR L7
L8 4 DUP REM L7 (8 DUPLICATES REMOVED)

=> s takeda K?/au
L9 14861 TAKEDA K?/AU

=> s l9 and periodon?
L10 41 L9 AND PERIODON?

=> s l10 and neurotroph?
L11 16 L10 AND NEUROTROPH?

=> dup rem l11
PROCESSING COMPLETED FOR L11
L12 5 DUP REM L11 (11 DUPLICATES REMOVED)

=> s shiba h?/au
L13 818 SHIBA H?/AU

=> s l13 and periodon?

```

L14          118 L13 AND PERIODON?

=> s l14 and neurotroph?
L15          16 L14 AND NEUROTROPH?

=> dup rem l15
PROCESSING COMPLETED FOR L15
L16          5 DUP REM L15 (11 DUPLICATES REMOVED)

=> mizuno n?/au
MIZUNO IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s mizuno n?/au
L17          3797 MIZUNO N?/AU

=> s l17 and periodon?
L18          52 L17 AND PERIODON?

=> s l18 and neurotroph?
L19          12 L18 AND NEUROTROPH?

=> dup rem l19
PROCESSING COMPLETED FOR L19
L20          4 DUP REM L19 (8 DUPLICATES REMOVED)

=> s yoshino h?/au
L21          3348 YOSHINO H?/AU

=> s l21 and periodon?
L22          30 L21 AND PERIODON?

=> s l22 and neurotroph?
L23          9 L22 AND NEUROTROPH?

=> dup rem l23
PROCESSING COMPLETED FOR L23
L24          3 DUP REM L23 (6 DUPLICATES REMOVED)

=> s hasegawa n?/au
L25          2635 HASEGAWA N?/AU

=> s l25 and periodon?
L26          27 L25 AND PERIODON?

=> s l26 and neurotroph?
L27          8 L26 AND NEUROTROPH?

=> dup rem l27
PROCESSING COMPLETED FOR L27
L28          3 DUP REM L27 (5 DUPLICATES REMOVED)

=> shinohara h?/au
SHINOHARA IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s shinohara h?/au
L29          3603 SHINOHARA H?/AU

```

=> s l29 and periodon?
L30 24 L29 AND PERIODON?

=> s l30 and neurotroph?
L31 5 L30 AND NEUROTROPH?

=> dup rem l31
PROCESSING COMPLETED FOR L31
L32 2 DUP REM L31 (3 DUPLICATES REMOVED)

=> dis his

(FILE 'HOME' ENTERED AT 10:09:16 ON 10 JUN 2009)

FILE 'MEDLINE, BIOSIS, CAPLUS, EMBASE' ENTERED AT 10:09:42 ON 10 JUN 2009

L1 3876 S KURIHARA H?/AU
L2 290 S L1 AND PERIODON?
L3 16 S L2 AND NEUROTROPH?
L4 5 DUP REM L3 (11 DUPLICATES REMOVED)
L5 5694 S KAWAGUCHI H?/AU
L6 78 S L5 AND PERIODON?
L7 12 S L6 AND NEUROTROPH?
L8 4 DUP REM L7 (8 DUPLICATES REMOVED)
L9 14861 S TAKEDA K?/AU
L10 41 S L9 AND PERIODON?
L11 16 S L10 AND NEUROTROPH?
L12 5 DUP REM L11 (11 DUPLICATES REMOVED)
L13 818 S SHIBA H?/AU
L14 118 S L13 AND PERIODON?
L15 16 S L14 AND NEUROTROPH?
L16 5 DUP REM L15 (11 DUPLICATES REMOVED)
L17 3797 S MIZUNO N?/AU
L18 52 S L17 AND PERIODON?
L19 12 S L18 AND NEUROTROPH?
L20 4 DUP REM L19 (8 DUPLICATES REMOVED)
L21 3348 S YOSHINO H?/AU
L22 30 S L21 AND PERIODON?
L23 9 S L22 AND NEUROTROPH?
L24 3 DUP REM L23 (6 DUPLICATES REMOVED)
L25 2635 S HASEGAWA N?/AU
L26 27 S L25 AND PERIODON?
L27 8 S L26 AND NEUROTROPH?
L28 3 DUP REM L27 (5 DUPLICATES REMOVED)
L29 3603 S SHINOHARA H?/AU
L30 24 S L29 AND PERIODON?
L31 5 S L30 AND NEUROTROPH?
L32 2 DUP REM L31 (3 DUPLICATES REMOVED)

=> dis ibib abs l4 1-5

L4 ANSWER 1 OF 5 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2008408883 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18390540
TITLE: Brain-derived neurotrophic factor stimulates
bone/cementum-related protein gene expression in
cementoblasts.
AUTHOR: Kajiya Mikihiro; Shiba Hideki; Fujita Tsuyoshi; Ouhara
Kazuhisa; Takeda Katsuhiko; Mizuno Noriyoshi; Kawaguchi
Hiroyuki; Kitagawa Masae; Takata Takashi; Tsuji Koichiro;
Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University

Graduate School of Biomedical Sciences, Minami-ku,
Hiroshima 34-8553, Japan.
SOURCE: The Journal of biological chemistry, (2008 Jun 6) Vol. 283,
No. 23, pp. 16259-67. Electronic Publication: 2008-04-03.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200807
ENTRY DATE: Entered STN: 27 Jun 2008
Last Updated on STN: 16 Jul 2008
Entered Medline: 15 Jul 2008

AB Brain-derived neurotrophic factor (BDNF), recognized as
essential in the developing nervous system, is involved in differentiation
and proliferation in non-neuronal cells, such as endothelial cells,
osteoblasts, and periodontal ligament cells. We have focused on
the application of BDNF to the regeneration of periodontal
tissue and indicated that BDNF promotes the regeneration of experimentally
created periodontal defects. Cementoblasts form cementum,
mineralized tissue, which is key to establishing a functional
periodontium. The application of BDNF to the regeneration of
periodontal tissue requires elucidation of the mechanism by which
BDNF regulates the functions of cementoblasts. In this study, we examined
how BDNF regulates the mRNA expression of bone/cementum-related proteins
(alkaline phosphatase (ALP), osteopontin (OPN), and bone morphogenetic
protein-2 (BMP-2)) in cultures of immortalized human cementoblast-like
(HCEM) cells. BDNF elevated the mRNA levels of ALP, OPN, and BMP-2 in
HCEM cells. Small interfering RNA (siRNA) for TRKB, a high affinity
receptor of BDNF, siRNA for ELK-1, which is a downstream target of ERK1/2,
and PD98059, an ERK inhibitor, obviated the increase in the mRNA levels.
BDNF increased the levels of phosphorylated ERK1/2 and Elk-1, and the
blocking of BDNF signaling by treatment with siRNA for TRKB and PD98059
suppressed the phosphorylation of ERK1/2 and Elk-1. Furthermore, BDNF
increased the levels of phosphorylated c-Raf, which activates the ERK
signaling pathway. These findings provide the first evidence that the
TrkB-c-Raf-ERK1/2-Elk-1 signaling pathway is required for the BDNF-induced
mRNA expression of ALP, OPN, and BMP-2 in HCEM cells.

L4 ANSWER 2 OF 5 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2008714203 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18980528
TITLE: Effect of neurotrophin-4/5 on
bone/cementum-related protein expressions and DNA synthesis
in cultures of human periodontal ligament cells.
AUTHOR: Mizuno Noriyoshi; Shiba Hideki; Inui Takafumi; Takeda
Katsuhiko; Kajiya Mikihiro; Hasegawa Naohiko; Kawaguchi
Hiroyuki; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University
Graduate School of Biomedical Sciences, Hiroshima, Japan..
mizuno@hiroshima-u.ac.jp
SOURCE: Journal of periodontology, (2008 Nov) Vol. 79, No. 11, pp.
2182-9.
Journal code: 8000345. ISSN: 0022-3492.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 200902
ENTRY DATE: Entered STN: 5 Nov 2008

Last Updated on STN: 15 Feb 2009

Entered Medline: 12 Feb 2009

AB BACKGROUND: We studied neurotrophins (NTs) as signaling molecules for periodontal tissue regeneration and showed that nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) modulate the proliferation and differentiation of human periodontal ligament (HPL) cells in vitro. The purpose of this study was to investigate whether NT-4/5 also has the ability to regulate the function of HPL cells. METHODS: mRNA expressions of NT-4/5 and its high-affinity tyrosine kinase receptor (trkB) were analyzed in HPL cells by reverse transcription-polymerase chain reaction. We examined how NT-4/5 regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase [ALPase], osteopontin [OPN], osteocalcin [OC], and bone morphogenetic protein [BMP]-2) in cultures of HPL cells. Moreover, the effects of NT-4/5 on calcification, the production of OPN and OC, and DNA synthesis in HPL cells were examined. RESULTS: NT-4/5 and trkB mRNA were expressed in HPL cells. NT-4/5 elevated the mRNA levels of ALPase, OPN, OC, and BMP-2 and the syntheses of OPN, OC, and DNA in HPL cells. PD98059, an extracellular signal-regulated kinase (ERK) inhibitor, obviated the increase in the mRNA levels of ALPase, OPN, OC, and BMP-2. NT-4/5 increased the levels of phosphorylated ERK1/2. Furthermore, NT-4/5 enhanced the amount of mineral deposits in cultures of HPL cells. CONCLUSION: NT-4/5, as well as BDNF and NGF, is suggested to play a role in the regulation of function of periodontal ligament cells.

L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:259902 CAPLUS

DOCUMENT NUMBER: 142:303690

TITLE: Remedy and therapeutic method for periodontal diseases and pulpal diseases with neurotrophic factors

INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda, Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino, Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki

PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan

SOURCE: PCT Int. Appl., 86 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004271843	A1	20050324	AU 2004-271843	20040908
EP 1671641	A1	20060621	EP 2004-787706	20040908
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1871024	A	20061129	CN 2004-80031194	20040908

RU 2336089	C2	20081020	RU 2006-111465	20040908
US 20070071693	A1	20070329	US 2006-571069	20061207
PRIORITY APPLN. INFO.:			JP 2003-316719	A 20030909
			WO 2004-JP13023	W 20040908

AB It is intended to provide a remedy and a therapeutic method for periodontal diseases and pulpal diseases, a transplantation material for regenerating a periodontal tissue and a method of regenerating a periodontal tissue. Namely, a remedy for periodontal diseases and pulpal diseases comprising a neurotrophic factor as the active ingredient. The effect of brain-derived neurotrophic factor (BDNF) on cultured human periodontal ligament cell and human gingival keratinocyte was examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 5 MEDLINE on STN DUPLICATE 3

ACCESSION NUMBER: 2005583578 MEDLINE

DOCUMENT NUMBER: PubMed ID: 16259615

TITLE: Brain-derived neurotrophic factor enhances periodontal tissue regeneration.

AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi; Hasegawa Naohiko; Mouri Yoshihiro; Hirachi Akio; Yoshino Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi

CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.

SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp. 1618-29.
Journal code: 9505538. ISSN: 1076-3279.

PUB. COUNTRY: United States

DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200512

ENTRY DATE: Entered STN: 3 Nov 2005
Last Updated on STN: 23 Dec 2005
Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF) could be involved in periodontal tissue regeneration, we examined the effects of BDNF on proliferation and the expression of bone (cementum)- related proteins (osteopontin, bone morphogenetic protein [BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin) in cultures of human periodontal ligament (HPL) cells, which are thought to be prerequisite for periodontal tissue regeneration, and on proliferation and angiogenesis in human endothelial cells. Furthermore, we examined the effect of BDNF on the regeneration of periodontal tissues in experimentally induced periodontal defects in dogs. BDNF elevated the expression of ALPase and osteocalcin mRNAs and increased the synthesis of osteopontin, BMP-2, and type I collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular endothelial growth factor-B and tenascin-X, and proliferation and angiogenesis in human endothelial cells. In vivo studies showed that BDNF stimulated the formation of new alveolar bone cementum and connective new fibers, which were inserted into the newly formed cementum and bone. BDNF also stimulated blood capillary formation. These findings suggest that the regulation of functioning of periodontal ligament cells and endothelial cells by BDNF results in the promotion of periodontal tissue regeneration.

L4 ANSWER 5 OF 5 MEDLINE on STN DUPLICATE 4
 ACCESSION NUMBER: 2003081727 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 12593600
 TITLE: Neurotrophins in cultured cells from
 periodontal tissues.
 AUTHOR: Kurihara Hidemi; Shinohara Hiroaki; Yoshino
 Hiroshi; Takeda Katsuhiko; Shiba Hideki
 CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier
 Medical Science, Hiroshima University Graduate School of
 Biomedical Science, Hiroshima, Japan..
 hkuri@hiroshima-u.ac.jp
 SOURCE: Journal of periodontology, (2003 Jan) Vol. 74, No. 1, pp.
 76-84. Ref: 67
 Journal code: 8000345. ISSN: 0022-3492.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 (RESEARCH SUPPORT, NON-U.S. GOV'T)
 General Review; (REVIEW)
 LANGUAGE: English
 FILE SEGMENT: Dental Journals; Priority Journals
 ENTRY MONTH: 200305
 ENTRY DATE: Entered STN: 21 Feb 2003
 Last Updated on STN: 8 May 2003
 Entered Medline: 7 May 2003

AB We review the basic functions of neurotrophins and their
 receptors and discuss the expression and functions of
 neurotrophins and their specific receptors based on recent data
 using cultured cells from human periodontal tissues.
 Neurotrophins, nerve growth factor (NGF), brain-derived
 neurotrophic factor (BDNF), and neurotrophin-3 (NT-3)
 play crucial roles in the differentiation and survival of neural cells.
 Neurotrophins activate 2 different receptor classes: the
 tropomyosin-related kinase (Trk) family of receptor tyrosine kinases
 (TrkA, TrkB, and TrkC) and the p75 receptor, a member of the tumor
 necrosis factor receptor superfamily. Neurotrophins regulate
 both cell death and cell survival through activations of Trk receptors
 and/or p75 neurotrophin receptor. It has been reported that
 neurotrophins are also produced from non-neuronal cells, such as
 leukocytes, osteoblasts, or fibroblasts, and act in many other ways on
 non-neuronal cells. Neurotrophin expression during bone
 fracture healing is especially interesting, and neurotrophins
 are now implicated in hard tissue regeneration. It is well known that
 neurotrophins and their receptors are expressed in tooth
 development. Recent studies have found that neurotrophins and
 Trk receptors are expressed in mouse osteoblastic cell lines. Human
 periodontal ligament cells, human gingival fibroblasts, and human
 gingival keratinocytes expressed mRNA for NGF and TrkA. The secretion of
 bioactive NGF peptides from human periodontal ligament cells and
 human gingival keratinocytes was confirmed by bioassay using PC12 cells
 (rat adrenal pheochromocytoma cells). The expression of NGF and TrkA mRNA
 was regulated by interleukin (IL)-1 β . NGF increased DNA synthesis and
 expressions of mRNA for bone-related proteins, alkaline phosphatase, and
 osteopontin in human periodontal ligament cells.
 Neurotrophins and Trk receptors expressed in human
 periodontal tissue may contribute to regeneration as well as
 innervation of periodontal tissue through local autocrine and
 paracrine pathways. Recent data suggest that some functions of
 neurotrophins and Trk receptors relate to periodontal
 disease and periodontal tissue regeneration. However, in vivo
 studies will be required to clarify the roles of neurotrophins
 and their receptors, including p75, in periodontal disease and
 periodontal tissue regeneration.

=> FIL STNGUIDE
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
72.56	72.78

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-0.82	-0.82

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FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Jun 5, 2009 (20090605/UP).

=> dis ibib abs l8 1-4

YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

L8 ANSWER 1 OF 4

MEDLINE on STN

DUPLICATE 1

ACCESSION NUMBER: 2008408883 MEDLINE

DOCUMENT NUMBER: PubMed ID: 18390540

TITLE: Brain-derived neurotrophic factor stimulates
bone/cementum-related protein gene expression in
cementoblasts.

AUTHOR: Kajiya Mikihiro; Shiba Hideki; Fujita Tsuyoshi; Ouhara
Kazuhisa; Takeda Katsuhiko; Mizuno Noriyoshi;
Kawaguchi Hiroyuki; Kitagawa Masae; Takata Takashi;
Tsuji Koichiro; Kurihara Hidemi

CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University
Graduate School of Biomedical Sciences, Minami-ku,
Hiroshima 34-8553, Japan.

SOURCE: The Journal of biological chemistry, (2008 Jun 6) Vol. 283,
No. 23, pp. 16259-67. Electronic Publication: 2008-04-03.
Journal code: 2985121R. ISSN: 0021-9258.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200807

ENTRY DATE: Entered STN: 27 Jun 2008

Last Updated on STN: 16 Jul 2008

Entered Medline: 15 Jul 2008

AB Brain-derived neurotrophic factor (BDNF), recognized as
essential in the developing nervous system, is involved in differentiation
and proliferation in non-neuronal cells, such as endothelial cells,
osteoblasts, and periodontal ligament cells. We have focused on
the application of BDNF to the regeneration of periodontal
tissue and indicated that BDNF promotes the regeneration of experimentally
created periodontal defects. Cementoblasts form cementum,
mineralized tissue, which is key to establishing a functional
periodontium. The application of BDNF to the regeneration of
periodontal tissue requires elucidation of the mechanism by which
BDNF regulates the functions of cementoblasts. In this study, we examined
how BDNF regulates the mRNA expression of bone/cementum-related proteins
(alkaline phosphatase (ALP), osteopontin (OPN), and bone morphogenetic

protein-2 (BMP-2)) in cultures of immortalized human cementoblast-like (HCEM) cells. BDNF elevated the mRNA levels of ALP, OPN, and BMP-2 in HCEM cells. Small interfering RNA (siRNA) for TRKB, a high affinity receptor of BDNF, siRNA for ELK-1, which is a downstream target of ERK1/2, and PD98059, an ERK inhibitor, obviated the increase in the mRNA levels. BDNF increased the levels of phosphorylated ERK1/2 and Elk-1, and the blocking of BDNF signaling by treatment with siRNA for TRKB and PD98059 suppressed the phosphorylation of ERK1/2 and Elk-1. Furthermore, BDNF increased the levels of phosphorylated c-Raf, which activates the ERK signaling pathway. These findings provide the first evidence that the TrkB-c-Raf-ERK1/2-Elk-1 signaling pathway is required for the BDNF-induced mRNA expression of ALP, OPN, and BMP-2 in HCEM cells.

L8 ANSWER 2 OF 4 MEDLINE on STN DUPLICATE 2
 ACCESSION NUMBER: 2008714203 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 18980528
 TITLE: Effect of neurotrophin-4/5 on bone/cementum-related protein expressions and DNA synthesis in cultures of human periodontal ligament cells.
 AUTHOR: Mizuno Noriyoshi; Shiba Hideki; Inui Takafumi; Takeda Katsuhiro; Kajiya Mikihiro; Hasegawa Naohiko; Kawaguchi Hiroyuki; Kurihara Hidemi
 CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.. mizuno@hiroshima-u.ac.jp
 SOURCE: Journal of periodontology, (2008 Nov) Vol. 79, No. 11, pp. 2182-9. Journal code: 8000345. ISSN: 0022-3492.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
 LANGUAGE: English
 FILE SEGMENT: Dental Journals; Priority Journals
 ENTRY MONTH: 200902
 ENTRY DATE: Entered STN: 5 Nov 2008
 Last Updated on STN: 15 Feb 2009
 Entered Medline: 12 Feb 2009

AB BACKGROUND: We studied neurotrophins (NTs) as signaling molecules for periodontal tissue regeneration and showed that nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) modulate the proliferation and differentiation of human periodontal ligament (HPL) cells in vitro. The purpose of this study was to investigate whether NT-4/5 also has the ability to regulate the function of HPL cells. METHODS: mRNA expressions of NT-4/5 and its high-affinity tyrosine kinase receptor (trkB) were analyzed in HPL cells by reverse transcription-polymerase chain reaction. We examined how NT-4/5 regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase [ALPase], osteopontin [OPN], osteocalcin [OC], and bone morphogenetic protein [BMP]-2) in cultures of HPL cells. Moreover, the effects of NT-4/5 on calcification, the production of OPN and OC, and DNA synthesis in HPL cells were examined. RESULTS: NT-4/5 and trkB mRNA were expressed in HPL cells. NT-4/5 elevated the mRNA levels of ALPase, OPN, OC, and BMP-2 and the syntheses of OPN, OC, and DNA in HPL cells. PD98059, an extracellular signal-regulated kinase (ERK) inhibitor, obviated the increase in the mRNA levels of ALPase, OPN, OC, and BMP-2. NT-4/5 increased the levels of phosphorylated ERK1/2. Furthermore, NT-4/5 enhanced the amount of mineral deposits in cultures of HPL cells. CONCLUSION: NT-4/5, as well as BDNF and NGF, is suggested to play a role in the regulation of function of periodontal ligament cells.

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2005:259902 CAPLUS

DOCUMENT NUMBER: 142:303690
 TITLE: Remedy and therapeutic method for periodontal diseases and pulpal diseases with neurotrophic factors
 INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda, Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino, Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki
 PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan
 SOURCE: PCT Int. Appl., 86 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004271843	A1	20050324	AU 2004-271843	20040908
EP 1671641	A1	20060621	EP 2004-787706	20040908
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1871024	A	20061129	CN 2004-80031194	20040908
RU 2336089	C2	20081020	RU 2006-111465	20040908
US 20070071693	A1	20070329	US 2006-571069	20061207
PRIORITY APPLN. INFO.:			JP 2003-316719	A 20030909
			WO 2004-JP13023	W 20040908

AB It is intended to provide a remedy and a therapeutic method for periodontal diseases and pulpal diseases, a transplantation material for regenerating a periodontal tissue and a method of regenerating a periodontal tissue. Namely, a remedy for periodontal diseases and pulpal diseases comprising a neurotrophic factor as the active ingredient. The effect of brain-derived neurotrophic factor (BDNF) on cultured human periodontal ligament cell and human gingival keratinocyte was examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 4 MEDLINE on STN DUPLICATE 3
 ACCESSION NUMBER: 2005583578 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 16259615
 TITLE: Brain-derived neurotrophic factor enhances periodontal tissue regeneration.
 AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi; Hasegawa Naohiko; Mouri Yoshihiro; Hirachi Akio; Yoshino Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi
 CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.

SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp. 1618-29.
Journal code: 9505538. ISSN: 1076-3279.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 3 Nov 2005
Last Updated on STN: 23 Dec 2005
Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF) could be involved in periodontal tissue regeneration, we examined the effects of BDNF on proliferation and the expression of bone (cementum)- related proteins (osteopontin, bone morphogenetic protein [BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin) in cultures of human periodontal ligament (HPL) cells, which are thought to be prerequisite for periodontal tissue regeneration, and on proliferation and angiogenesis in human endothelial cells. Furthermore, we examined the effect of BDNF on the regeneration of periodontal tissues in experimentally induced periodontal defects in dogs. BDNF elevated the expression of ALPase and osteocalcin mRNAs and increased the synthesis of osteopontin, BMP-2, and type I collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular endothelial growth factor-B and tenascin-X, and proliferation and angiogenesis in human endothelial cells. In vivo studies showed that BDNF stimulated the formation of new alveolar bone cementum and connective new fibers, which were inserted into the newly formed cementum and bone. BDNF also stimulated blood capillary formation. These findings suggest that the regulation of functioning of periodontal ligament cells and endothelial cells by BDNF results in the promotion of periodontal tissue regeneration.

=> dis ibib abs l12 1-5

YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

L12 ANSWER 1 OF 5 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2008408883 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18390540
TITLE: Brain-derived neurotrophic factor stimulates bone/cementum-related protein gene expression in cementoblasts.
AUTHOR: Kajiya Mikihiro; Shiba Hideki; Fujita Tsuyoshi; Ouhara Kazuhisa; Takeda Katsuhiko; Mizuno Noriyoshi; Kawaguchi Hiroyuki; Kitagawa Masae; Takata Takashi; Tsuji Koichiro; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University Graduate School of Biomedical Sciences, Minami-ku, Hiroshima 34-8553, Japan.
SOURCE: The Journal of biological chemistry, (2008 Jun 6) Vol. 283, No. 23, pp. 16259-67. Electronic Publication: 2008-04-03. Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 200807
ENTRY DATE: Entered STN: 27 Jun 2008
Last Updated on STN: 16 Jul 2008
Entered Medline: 15 Jul 2008

AB Brain-derived neurotrophic factor (BDNF), recognized as essential in the developing nervous system, is involved in differentiation and proliferation in non-neuronal cells, such as endothelial cells, osteoblasts, and periodontal ligament cells. We have focused on the application of BDNF to the regeneration of periodontal tissue and indicated that BDNF promotes the regeneration of experimentally created periodontal defects. Cementoblasts form cementum, mineralized tissue, which is key to establishing a functional periodontium. The application of BDNF to the regeneration of periodontal tissue requires elucidation of the mechanism by which BDNF regulates the functions of cementoblasts. In this study, we examined how BDNF regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase (ALP), osteopontin (OPN), and bone morphogenetic protein-2 (BMP-2)) in cultures of immortalized human cementoblast-like (HCEM) cells. BDNF elevated the mRNA levels of ALP, OPN, and BMP-2 in HCEM cells. Small interfering RNA (siRNA) for TRKB, a high affinity receptor of BDNF, siRNA for ELK-1, which is a downstream target of ERK1/2, and PD98059, an ERK inhibitor, obviated the increase in the mRNA levels. BDNF increased the levels of phosphorylated ERK1/2 and Elk-1, and the blocking of BDNF signaling by treatment with siRNA for TRKB and PD98059 suppressed the phosphorylation of ERK1/2 and Elk-1. Furthermore, BDNF increased the levels of phosphorylated c-Raf, which activates the ERK signaling pathway. These findings provide the first evidence that the TrkB-c-Raf-ERK1/2-Elk-1 signaling pathway is required for the BDNF-induced mRNA expression of ALP, OPN, and BMP-2 in HCEM cells.

L12 ANSWER 2 OF 5 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2008714203 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18980528
TITLE: Effect of neurotrophin-4/5 on bone/cementum-related protein expressions and DNA synthesis in cultures of human periodontal ligament cells.
AUTHOR: Mizuno Noriyoshi; Shiba Hideki; Inui Takafumi; Takeda Katsuhiko; Kajiya Mikihiro; Hasegawa Naohiko; Kawaguchi Hiroyuki; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.. mizuno@hiroshima-u.ac.jp
SOURCE: Journal of periodontology, (2008 Nov) Vol. 79, No. 11, pp. 2182-9.
Journal code: 8000345. ISSN: 0022-3492.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 200902
ENTRY DATE: Entered STN: 5 Nov 2008
Last Updated on STN: 15 Feb 2009
Entered Medline: 12 Feb 2009

AB BACKGROUND: We studied neurotrophins (NTs) as signaling molecules for periodontal tissue regeneration and showed that nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) modulate the proliferation and differentiation of human periodontal ligament (HPL) cells in vitro. The purpose of this study was to investigate whether NT-4/5 also has the ability to regulate the function of HPL cells. METHODS: mRNA expressions of NT-4/5 and its

high-affinity tyrosine kinase receptor (trk)B were analyzed in HPL cells by reverse transcription-polymerase chain reaction. We examined how NT-4/5 regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase [ALPase], osteopontin [OPN], osteocalcin [OC], and bone morphogenetic protein [BMP]-2) in cultures of HPL cells. Moreover, the effects of NT-4/5 on calcification, the production of OPN and OC, and DNA synthesis in HPL cells were examined. RESULTS: NT-4/5 and trkB mRNA were expressed in HPL cells. NT-4/5 elevated the mRNA levels of ALPase, OPN, OC, and BMP-2 and the syntheses of OPN, OC, and DNA in HPL cells. PD98059, an extracellular signal-regulated kinase (ERK) inhibitor, obviated the increase in the mRNA levels of ALPase, OPN, OC, and BMP-2. NT-4/5 increased the levels of phosphorylated ERK1/2. Furthermore, NT-4/5 enhanced the amount of mineral deposits in cultures of HPL cells. CONCLUSION: NT-4/5, as well as BDNF and NGF, is suggested to play a role in the regulation of function of periodontal ligament cells.

L12 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:259902 CAPLUS

DOCUMENT NUMBER: 142:303690

TITLE: Remedy and therapeutic method for periodontal diseases and pulpal diseases with neurotrophic factors

INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda, Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino, Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki

PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan

SOURCE: PCT Int. Appl., 86 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2004271843	A1	20050324	AU 2004-271843	20040908
EP 1671641	A1	20060621	EP 2004-787706	20040908
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1871024	A	20061129	CN 2004-80031194	20040908
RU 2336089	C2	20081020	RU 2006-111465	20040908
US 20070071693	A1	20070329	US 2006-571069	20061207
PRIORITY APPLN. INFO.:			JP 2003-316719	A 20030909
			WO 2004-JP13023	W 20040908

AB It is intended to provide a remedy and a therapeutic method for periodontal diseases and pulpal diseases, a transplantation material for regenerating a periodontal tissue and a method of regenerating a periodontal tissue. Namely, a remedy for periodontal diseases and pulpal diseases comprising a

neurotrophic factor as the active ingredient. The effect of brain-derived neurotrophic factor (BDNF) on cultured human periodontal ligament cell and human gingival keratinocyte was examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 4 OF 5 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2005583578 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16259615
TITLE: Brain-derived neurotrophic factor enhances periodontal tissue regeneration.
AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi; Hasegawa Naohiko; Mouri Yoshihiro; Hirachi Akio; Yoshino Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.
SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp. 1618-29.
Journal code: 9505538. ISSN: 1076-3279.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 3 Nov 2005
Last Updated on STN: 23 Dec 2005
Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF) could be involved in periodontal tissue regeneration, we examined the effects of BDNF on proliferation and the expression of bone (cementum)- related proteins (osteopontin, bone morphogenetic protein [BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin) in cultures of human periodontal ligament (HPL) cells, which are thought to be prerequisite for periodontal tissue regeneration, and on proliferation and angiogenesis in human endothelial cells. Furthermore, we examined the effect of BDNF on the regeneration of periodontal tissues in experimentally induced periodontal defects in dogs. BDNF elevated the expression of ALPase and osteocalcin mRNAs and increased the synthesis of osteopontin, BMP-2, and type I collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular endothelial growth factor-B and tenascin-X, and proliferation and angiogenesis in human endothelial cells. In vivo studies showed that BDNF stimulated the formation of new alveolar bone cementum and connective new fibers, which were inserted into the newly formed cementum and bone. BDNF also stimulated blood capillary formation. These findings suggest that the regulation of functioning of periodontal ligament cells and endothelial cells by BDNF results in the promotion of periodontal tissue regeneration.

L12 ANSWER 5 OF 5 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2003081727 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12593600
TITLE: Neurotrophins in cultured cells from periodontal tissues.
AUTHOR: Kurihara Hidemi; Shinohara Hiroaki; Yoshino Hiroshi; Takeda Katsuhiko; Shiba Hideki
CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of

Biomedical Science, Hiroshima, Japan..
hkuri@hiroshima-u.ac.jp
SOURCE: Journal of periodontology, (2003 Jan) Vol. 74, No. 1, pp.
76-84. Ref: 67
Journal code: 8000345. ISSN: 0022-3492.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 21 Feb 2003
Last Updated on STN: 8 May 2003
Entered Medline: 7 May 2003

AB We review the basic functions of neurotrophins and their receptors and discuss the expression and functions of neurotrophins and their specific receptors based on recent data using cultured cells from human periodontal tissues. Neurotrophins, nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), and neurotrophin-3 (NT-3) play crucial roles in the differentiation and survival of neural cells. Neurotrophins activate 2 different receptor classes: the tropomyosin-related kinase (Trk) family of receptor tyrosine kinases (TrkA, TrkB, and TrkC) and the p75 receptor, a member of the tumor necrosis factor receptor superfamily. Neurotrophins regulate both cell death and cell survival through activations of Trk receptors and/or p75 neurotrophin receptor. It has been reported that neurotrophins are also produced from non-neuronal cells, such as leukocytes, osteoblasts, or fibroblasts, and act in many other ways on non-neuronal cells. Neurotrophin expression during bone fracture healing is especially interesting, and neurotrophins are now implicated in hard tissue regeneration. It is well known that neurotrophins and their receptors are expressed in tooth development. Recent studies have found that neurotrophins and Trk receptors are expressed in mouse osteoblastic cell lines. Human periodontal ligament cells, human gingival fibroblasts, and human gingival keratinocytes expressed mRNA for NGF and TrkA. The secretion of bioactive NGF peptides from human periodontal ligament cells and human gingival keratinocytes was confirmed by bioassay using PC12 cells (rat adrenal pheochromocytoma cells). The expression of NGF and TrkA.mRNA was regulated by interleukin (IL)-1beta. NGF increased DNA synthesis and expressions of mRNA for bone-related proteins, alkaline phosphatase, and osteopontin in human periodontal ligament cells. Neurotrophins and Trk receptors expressed in human periodontal tissue may contribute to regeneration as well as innervation of periodontal tissue through local autocrine and paracrine pathways. Recent data suggest that some functions of neurotrophins and Trk receptors relate to periodontal disease and periodontal tissue regeneration. However, in vivo studies will be required to clarify the roles of neurotrophins and their receptors, including p75, in periodontal disease and periodontal tissue regeneration.

=> dis ibib abs l16 1-5

YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

ACCESSION NUMBER: 2008408883 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18390540
TITLE: Brain-derived neurotrophic factor stimulates
bone/cementum-related protein gene expression in
cementoblasts.
AUTHOR: Kajiya Mikihiro; Shiba Hideki; Fujita Tsuyoshi;
Ouhara Kazuhisa; Takeda Katsuhiko; Mizuno Noriyoshi;
Kawaguchi Hiroyuki; Kitagawa Masae; Takata Takashi; Tsuji
Koichiro; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University
Graduate School of Biomedical Sciences, Minami-ku,
Hiroshima 34-8553, Japan.
SOURCE: The Journal of biological chemistry, (2008 Jun 6) Vol. 283,
No. 23, pp. 16259-67. Electronic Publication: 2008-04-03.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200807
ENTRY DATE: Entered STN: 27 Jun 2008
Last Updated on STN: 16 Jul 2008
Entered Medline: 15 Jul 2008

AB Brain-derived neurotrophic factor (BDNF), recognized as
essential in the developing nervous system, is involved in differentiation
and proliferation in non-neuronal cells, such as endothelial cells,
osteoblasts, and periodontal ligament cells. We have focused on
the application of BDNF to the regeneration of periodontal
tissue and indicated that BDNF promotes the regeneration of experimentally
created periodontal defects. Cementoblasts form cementum,
mineralized tissue, which is key to establishing a functional
periodontium. The application of BDNF to the regeneration of
periodontal tissue requires elucidation of the mechanism by which
BDNF regulates the functions of cementoblasts. In this study, we examined
how BDNF regulates the mRNA expression of bone/cementum-related proteins
(alkaline phosphatase (ALP), osteopontin (OPN), and bone morphogenetic
protein-2 (BMP-2)) in cultures of immortalized human cementoblast-like
(HCEM) cells. BDNF elevated the mRNA levels of ALP, OPN, and BMP-2 in
HCEM cells. Small interfering RNA (siRNA) for TRKB, a high affinity
receptor of BDNF, siRNA for ELK-1, which is a downstream target of ERK1/2,
and PD98059, an ERK inhibitor, obviated the increase in the mRNA levels.
BDNF increased the levels of phosphorylated ERK1/2 and Elk-1, and the
blocking of BDNF signaling by treatment with siRNA for TRKB and PD98059
suppressed the phosphorylation of ERK1/2 and Elk-1. Furthermore, BDNF
increased the levels of phosphorylated c-Raf, which activates the ERK
signaling pathway. These findings provide the first evidence that the
TrkB-c-Raf-ERK1/2-Elk-1 signaling pathway is required for the BDNF-induced
mRNA expression of ALP, OPN, and BMP-2 in HCEM cells.

L16 ANSWER 2 OF 5 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2008714203 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18980528
TITLE: Effect of neurotrophin-4/5 on
bone/cementum-related protein expressions and DNA synthesis
in cultures of human periodontal ligament cells.
AUTHOR: Mizuno Noriyoshi; Shiba Hideki; Inui Takafumi;
Takeda Katsuhiko; Kajiya Mikihiro; Hasegawa Naohiko;
Kawaguchi Hiroyuki; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University
Graduate School of Biomedical Sciences, Hiroshima, Japan..
mizuno@hiroshima-u.ac.jp

SOURCE: Journal of periodontology, (2008 Nov) Vol. 79, No. 11, pp. 2182-9.
 Journal code: 8000345. ISSN: 0022-3492.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 (RESEARCH SUPPORT, NON-U.S. GOV'T)
 LANGUAGE: English
 FILE SEGMENT: Dental Journals; Priority Journals
 ENTRY MONTH: 200902
 ENTRY DATE: Entered STN: 5 Nov 2008
 Last Updated on STN: 15 Feb 2009
 Entered Medline: 12 Feb 2009

AB BACKGROUND: We studied neurotrophins (NTs) as signaling molecules for periodontal tissue regeneration and showed that nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) modulate the proliferation and differentiation of human periodontal ligament (HPL) cells in vitro. The purpose of this study was to investigate whether NT-4/5 also has the ability to regulate the function of HPL cells. METHODS: mRNA expressions of NT-4/5 and its high-affinity tyrosine kinase receptor (trkB) were analyzed in HPL cells by reverse transcription-polymerase chain reaction. We examined how NT-4/5 regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase [ALPase], osteopontin [OPN], osteocalcin [OC], and bone morphogenetic protein [BMP]-2) in cultures of HPL cells. Moreover, the effects of NT-4/5 on calcification, the production of OPN and OC, and DNA synthesis in HPL cells were examined. RESULTS: NT-4/5 and trkB mRNA were expressed in HPL cells. NT-4/5 elevated the mRNA levels of ALPase, OPN, OC, and BMP-2 and the syntheses of OPN, OC, and DNA in HPL cells. PD98059, an extracellular signal-regulated kinase (ERK) inhibitor, obviated the increase in the mRNA levels of ALPase, OPN, OC, and BMP-2. NT-4/5 increased the levels of phosphorylated ERK1/2. Furthermore, NT-4/5 enhanced the amount of mineral deposits in cultures of HPL cells. CONCLUSION: NT-4/5, as well as BDNF and NGF, is suggested to play a role in the regulation of function of periodontal ligament cells.

L16 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:259902 CAPLUS
 DOCUMENT NUMBER: 142:303690
 TITLE: Remedy and therapeutic method for periodontal diseases and pulpal diseases with neurotrophic factors
 INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda, Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino, Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki
 PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan
 SOURCE: PCT Int. Appl., 86 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
 SN, TD, TG

AU 2004271843 A1 20050324 AU 2004-271843 20040908
 EP 1671641 A1 20060621 EP 2004-787706 20040908

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

CN 1871024 A 20061129 CN 2004-80031194 20040908

RU 2336089 C2 20081020 RU 2006-111465 20040908

US 20070071693 A1 20070329 US 2006-571069 20061207

PRIORITY APPLN. INFO.: JP 2003-316719 A 20030909

WO 2004-JP13023 W 20040908

AB It is intended to provide a remedy and a therapeutic method for
 periodontal diseases and pulpal diseases, a transplantation
 material for regenerating a periodontal tissue and a method of
 regenerating a periodontal tissue. Namely, a remedy for
 periodontal diseases and pulpal diseases comprising a
 neurotrophic factor as the active ingredient. The effect of
 brain-derived neurotrophic factor (BDNF) on cultured human
 periodontal ligament cell and human gingival keratinocyte was
 examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 5 MEDLINE on STN DUPLICATE 3

ACCESSION NUMBER: 2005583578 MEDLINE

DOCUMENT NUMBER: PubMed ID: 16259615

TITLE: Brain-derived neurotrophic factor enhances
 periodontal tissue regeneration.

AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi;
 Hasegawa Naohiko; Mouri Yoshihiro; Hirachi Akio; Yoshino
 Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi

CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier
 Medical Science, Hiroshima University Graduate School of
 Biomedical Sciences, Hiroshima, Japan.

SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp.
 1618-29.

Journal code: 9505538. ISSN: 1076-3279.

PUB. COUNTRY: United States

DOCUMENT TYPE: (COMPARATIVE STUDY)
 Journal; Article; (JOURNAL ARTICLE)
 (RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200512

ENTRY DATE: Entered STN: 3 Nov 2005

Last Updated on STN: 23 Dec 2005

Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF)
 could be involved in periodontal tissue regeneration, we
 examined the effects of BDNF on proliferation and the expression of bone
 (cementum)- related proteins (osteopontin, bone morphogenetic protein
 [BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin)
 in cultures of human periodontal ligament (HPL) cells, which are
 thought to be prerequisite for periodontal tissue regeneration,
 and on proliferation and angiogenesis in human endothelial cells.
 Furthermore, we examined the effect of BDNF on the regeneration of
 periodontal tissues in experimentally induced periodontal
 defects in dogs. BDNF elevated the expression of ALPase and osteocalcin
 mRNAs and increased the synthesis of osteopontin, BMP-2, and type I

collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular endothelial growth factor-B and tenascin-X, and proliferation and angiogenesis in human endothelial cells. In vivo studies showed that BDNF stimulated the formation of new alveolar bone cementum and connective new fibers, which were inserted into the newly formed cementum and bone. BDNF also stimulated blood capillary formation. These findings suggest that the regulation of functioning of periodontal ligament cells and endothelial cells by BDNF results in the promotion of periodontal tissue regeneration.

L16 ANSWER 5 OF 5 MEDLINE on STN DUPLICATE 4
 ACCESSION NUMBER: 2003081727 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 12593600
 TITLE: Neurotrophins in cultured cells from periodontal tissues.
 AUTHOR: Kurihara Hidemi; Shinohara Hiroaki; Yoshino Hiroshi; Takeda Katsuhiko; Shiba Hideki
 CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Science, Hiroshima, Japan..
 hkuri@hiroshima-u.ac.jp
 SOURCE: Journal of periodontology, (2003 Jan) Vol. 74, No. 1, pp. 76-84. Ref: 67
 Journal code: 8000345. ISSN: 0022-3492.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
 (RESEARCH SUPPORT, NON-U.S. GOV'T)
 General Review; (REVIEW)
 LANGUAGE: English
 FILE SEGMENT: Dental Journals; Priority Journals
 ENTRY MONTH: 200305
 ENTRY DATE: Entered STN: 21 Feb 2003
 Last Updated on STN: 8 May 2003
 Entered Medline: 7 May 2003

AB We review the basic functions of neurotrophins and their receptors and discuss the expression and functions of neurotrophins and their specific receptors based on recent data using cultured cells from human periodontal tissues. Neurotrophins, nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), and neurotrophin-3 (NT-3) play crucial roles in the differentiation and survival of neural cells. Neurotrophins activate 2 different receptor classes: the tropomyosin-related kinase (Trk) family of receptor tyrosine kinases (TrkA, TrkB, and TrkC) and the p75 receptor, a member of the tumor necrosis factor receptor superfamily. Neurotrophins regulate both cell death and cell survival through activations of Trk receptors and/or p75 neurotrophin receptor. It has been reported that neurotrophins are also produced from non-neuronal cells, such as leukocytes, osteoblasts, or fibroblasts, and act in many other ways on non-neuronal cells. Neurotrophin expression during bone fracture healing is especially interesting, and neurotrophins are now implicated in hard tissue regeneration. It is well known that neurotrophins and their receptors are expressed in tooth development. Recent studies have found that neurotrophins and Trk receptors are expressed in mouse osteoblastic cell lines. Human periodontal ligament cells, human gingival fibroblasts, and human gingival keratinocytes expressed mRNA for NGF and TrkA. The secretion of bioactive NGF peptides from human periodontal ligament cells and human gingival keratinocytes was confirmed by bioassay using PC12 cells (rat adrenal pheochromocytoma cells). The expression of NGF and TrkA.mRNA was regulated by interleukin (IL)-1beta. NGF increased DNA synthesis and expressions of mRNA for bone-related proteins, alkaline phosphatase, and

osteopontin in human periodontal ligament cells. Neurotrophins and Trk receptors expressed in human periodontal tissue may contribute to regeneration as well as innervation of periodontal tissue through local autocrine and paracrine pathways. Recent data suggest that some functions of neurotrophins and Trk receptors relate to periodontal disease and periodontal tissue regeneration. However, in vivo studies will be required to clarify the roles of neurotrophins and their receptors, including p75, in periodontal disease and periodontal tissue regeneration.

=> dis ibib abs l20 1-4

YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

L20 ANSWER 1 OF 4 MEDLINE on STN DUPLICATE 1
 ACCESSION NUMBER: 2008408883 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 18390540
 TITLE: Brain-derived neurotrophic factor stimulates bone/cementum-related protein gene expression in cementoblasts.
 AUTHOR: Kajiya Mikihiro; Shiba Hideki; Fujita Tsuyoshi; Ouhara Kazuhisa; Takeda Katsuhiko; Mizuno Noriyoshi; Kawaguchi Hiroyuki; Kitagawa Masae; Takata Takashi; Tsuji Koichiro; Kurihara Hidemi
 CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University Graduate School of Biomedical Sciences, Minami-ku, Hiroshima 34-8553, Japan.
 SOURCE: The Journal of biological chemistry, (2008 Jun 6) Vol. 283, No. 23, pp. 16259-67. Electronic Publication: 2008-04-03. Journal code: 2985121R. ISSN: 0021-9258.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200807
 ENTRY DATE: Entered STN: 27 Jun 2008
 Last Updated on STN: 16 Jul 2008
 Entered Medline: 15 Jul 2008
 AB Brain-derived neurotrophic factor (BDNF), recognized as essential in the developing nervous system, is involved in differentiation and proliferation in non-neuronal cells, such as endothelial cells, osteoblasts, and periodontal ligament cells. We have focused on the application of BDNF to the regeneration of periodontal tissue and indicated that BDNF promotes the regeneration of experimentally created periodontal defects. Cementoblasts form cementum, mineralized tissue, which is key to establishing a functional periodontium. The application of BDNF to the regeneration of periodontal tissue requires elucidation of the mechanism by which BDNF regulates the functions of cementoblasts. In this study, we examined how BDNF regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase (ALP), osteopontin (OPN), and bone morphogenetic protein-2 (BMP-2)) in cultures of immortalized human cementoblast-like (HCEM) cells. BDNF elevated the mRNA levels of ALP, OPN, and BMP-2 in HCEM cells. Small interfering RNA (siRNA) for TRKB, a high affinity receptor of BDNF, siRNA for ELK-1, which is a downstream target of ERK1/2, and PD98059, an ERK inhibitor, obviated the increase in the mRNA levels. BDNF increased the levels of phosphorylated ERK1/2 and Elk-1, and the

blocking of BDNF signaling by treatment with siRNA for TRKB and PD98059 suppressed the phosphorylation of ERK1/2 and Elk-1. Furthermore, BDNF increased the levels of phosphorylated c-Raf, which activates the ERK signaling pathway. These findings provide the first evidence that the TrkB-c-Raf-ERK1/2-Elk-1 signaling pathway is required for the BDNF-induced mRNA expression of ALP, OPN, and BMP-2 in HCEM cells.

L20 ANSWER 2 OF 4 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2008714203 MEDLINE
DOCUMENT NUMBER: PubMed ID: 18980528
TITLE: Effect of neurotrophin-4/5 on
bone/cementum-related protein expressions and DNA synthesis
in cultures of human periodontal ligament cells.
AUTHOR: Mizuno Noriyoshi; Shiba Hideki; Inui Takafumi;
Takeda Katsuhiko; Kajiya Mikihiro; Hasegawa Naohiko;
Kawaguchi Hiroyuki; Kurihara Hidemi
CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University
Graduate School of Biomedical Sciences, Hiroshima, Japan..
mizuno@hiroshima-u.ac.jp
SOURCE: Journal of periodontology, (2008 Nov) Vol. 79, No. 11, pp.
2182-9.
Journal code: 8000345. ISSN: 0022-3492.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 200902
ENTRY DATE: Entered STN: 5 Nov 2008
Last Updated on STN: 15 Feb 2009
Entered Medline: 12 Feb 2009

AB BACKGROUND: We studied neurotrophins (NTs) as signaling molecules for periodontal tissue regeneration and showed that nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) modulate the proliferation and differentiation of human periodontal ligament (HPL) cells in vitro. The purpose of this study was to investigate whether NT-4/5 also has the ability to regulate the function of HPL cells. METHODS: mRNA expressions of NT-4/5 and its high-affinity tyrosine kinase receptor (trkB) were analyzed in HPL cells by reverse transcription-polymerase chain reaction. We examined how NT-4/5 regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase [ALPase], osteopontin [OPN], osteocalcin [OC], and bone morphogenetic protein [BMP]-2) in cultures of HPL cells. Moreover, the effects of NT-4/5 on calcification, the production of OPN and OC, and DNA synthesis in HPL cells were examined. RESULTS: NT-4/5 and trkB mRNA were expressed in HPL cells. NT-4/5 elevated the mRNA levels of ALPase, OPN, OC, and BMP-2 and the syntheses of OPN, OC, and DNA in HPL cells. PD98059, an extracellular signal-regulated kinase (ERK) inhibitor, obviated the increase in the mRNA levels of ALPase, OPN, OC, and BMP-2. NT-4/5 increased the levels of phosphorylated ERK1/2. Furthermore, NT-4/5 enhanced the amount of mineral deposits in cultures of HPL cells. CONCLUSION: NT-4/5, as well as BDNF and NGF, is suggested to play a role in the regulation of function of periodontal ligament cells.

L20 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:259902 CAPLUS
DOCUMENT NUMBER: 142:303690
TITLE: Remedy and therapeutic method for periodontal
diseases and pulpal diseases with neurotrophic
factors
INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda,
Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi;

PATENT ASSIGNEE(S): Yoshino, Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki
 SOURCE: Two Cells Co. Ltd., Japan
 PCT Int. Appl., 86 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2004271843	A1	20050324	AU 2004-271843	20040908
EP 1671641	A1	20060621	EP 2004-787706	20040908
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK			
CN 1871024	A	20061129	CN 2004-80031194	20040908
RU 2336089	C2	20081020	RU 2006-111465	20040908
US 20070071693	A1	20070329	US 2006-571069	20061207
PRIORITY APPLN. INFO.:			JP 2003-316719	A 20030909
			WO 2004-JP13023	W 20040908

AB It is intended to provide a remedy and a therapeutic method for periodontal diseases and pulpal diseases, a transplantation material for regenerating a periodontal tissue and a method of regenerating a periodontal tissue. Namely, a remedy for periodontal diseases and pulpal diseases comprising a neurotrophic factor as the active ingredient. The effect of brain-derived neurotrophic factor (BDNF) on cultured human periodontal ligament cell and human gingival keratinocyte was examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 4 OF 4 MEDLINE on STN DUPLICATE 3
 ACCESSION NUMBER: 2005583578 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 16259615
 TITLE: Brain-derived neurotrophic factor enhances periodontal tissue regeneration.
 AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi; Hasegawa Naohiko; Mouri Yoshihiro; Hirachi Akio; Yoshino Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi
 CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.
 SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp. 1618-29.
 Journal code: 9505538. ISSN: 1076-3279.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: (COMPARATIVE STUDY)
 Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 3 Nov 2005
Last Updated on STN: 23 Dec 2005
Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF) could be involved in periodontal tissue regeneration, we examined the effects of BDNF on proliferation and the expression of bone (cementum)- related proteins (osteopontin, bone morphogenetic protein [BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin) in cultures of human periodontal ligament (HPL) cells, which are thought to be prerequisite for periodontal tissue regeneration, and on proliferation and angiogenesis in human endothelial cells. Furthermore, we examined the effect of BDNF on the regeneration of periodontal tissues in experimentally induced periodontal defects in dogs. BDNF elevated the expression of ALPase and osteocalcin mRNAs and increased the synthesis of osteopontin, BMP-2, and type I collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular endothelial growth factor-B and tenascin-X, and proliferation and angiogenesis in human endothelial cells. In vivo studies showed that BDNF stimulated the formation of new alveolar bone cementum and connective new fibers, which were inserted into the newly formed cementum and bone. BDNF also stimulated blood capillary formation. These findings suggest that the regulation of functioning of periodontal ligament cells and endothelial cells by BDNF results in the promotion of periodontal tissue regeneration.

=> dis ibib abs l24 1-3

YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

L24 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:259902 CAPLUS
DOCUMENT NUMBER: 142:303690
TITLE: Remedy and therapeutic method for periodontal diseases and pulpal diseases with neurotrophic factors
INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda, Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino, Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki
PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan
SOURCE: PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,			

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
 SN, TD, TG

AU 2004271843 A1 20050324 AU 2004-271843 20040908
 EP 1671641 A1 20060621 EP 2004-787706 20040908
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK
 CN 1871024 A 20061129 CN 2004-80031194 20040908
 RU 2336089 C2 20081020 RU 2006-111465 20040908
 US 20070071693 A1 20070329 US 2006-571069 20061207
 PRIORITY APPLN. INFO.: JP 2003-316719 A 20030909
 WO 2004-JP13023 W 20040908

AB It is intended to provide a remedy and a therapeutic method for
 periodontal diseases and pulpal diseases, a transplantation
 material for regenerating a periodontal tissue and a method of
 regenerating a periodontal tissue. Namely, a remedy for
 periodontal diseases and pulpal diseases comprising a
 neurotrophic factor as the active ingredient. The effect of
 brain-derived neurotrophic factor (BDNF) on cultured human
 periodontal ligament cell and human gingival keratinocyte was
 examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 3 MEDLINE on STN DUPLICATE 1
 ACCESSION NUMBER: 2005583578 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 16259615
 TITLE: Brain-derived neurotrophic factor enhances
 periodontal tissue regeneration.
 AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi; Hasegawa
 Naohiko; Mouri Yoshihiro; Hirachi Akio; Yoshino
 Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi
 CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier
 Medical Science, Hiroshima University Graduate School of
 Biomedical Sciences, Hiroshima, Japan.
 SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp.
 1618-29.
 Journal code: 9505538. ISSN: 1076-3279.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: (COMPARATIVE STUDY)
 Journal; Article; (JOURNAL ARTICLE)
 (RESEARCH SUPPORT, NON-U.S. GOV'T)
 LANGUAGE: English
 FILE SEGMENT: Priority Journals
 ENTRY MONTH: 200512
 ENTRY DATE: Entered STN: 3 Nov 2005
 Last Updated on STN: 23 Dec 2005
 Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF)
 could be involved in periodontal tissue regeneration, we
 examined the effects of BDNF on proliferation and the expression of bone
 (cementum)- related proteins (osteopontin, bone morphogenetic protein
 [BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin)
 in cultures of human periodontal ligament (HPL) cells, which are
 thought to be prerequisite for periodontal tissue regeneration,
 and on proliferation and angiogenesis in human endothelial cells.
 Furthermore, we examined the effect of BDNF on the regeneration of
 periodontal tissues in experimentally induced periodontal
 defects in dogs. BDNF elevated the expression of ALPase and osteocalcin

mRNAs and increased the synthesis of osteopontin, BMP-2, and type I collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular endothelial growth factor-B and tenascin-X, and proliferation and angiogenesis in human endothelial cells. In vivo studies showed that BDNF stimulated the formation of new alveolar bone cementum and connective new fibers, which were inserted into the newly formed cementum and bone. BDNF also stimulated blood capillary formation. These findings suggest that the regulation of functioning of periodontal ligament cells and endothelial cells by BDNF results in the promotion of periodontal tissue regeneration.

L24 ANSWER 3 OF 3 MEDLINE on STN DUPLICATE 2
 ACCESSION NUMBER: 2003081727 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 12593600
 TITLE: Neurotrophins in cultured cells from periodontal tissues.
 AUTHOR: Kurihara Hidemi; Shinohara Hiroaki; Yoshino Hiroshi ; Takeda Katsuhiko; Shiba Hideki
 CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Science, Hiroshima, Japan.. hkuri@hiroshima-u.ac.jp
 SOURCE: Journal of periodontology, (2003 Jan) Vol. 74, No. 1, pp. 76-84. Ref: 67
 Journal code: 8000345. ISSN: 0022-3492.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T) General Review; (REVIEW)
 LANGUAGE: English
 FILE SEGMENT: Dental Journals; Priority Journals
 ENTRY MONTH: 200305
 ENTRY DATE: Entered STN: 21 Feb 2003
 Last Updated on STN: 8 May 2003
 Entered Medline: 7 May 2003

AB We review the basic functions of neurotrophins and their receptors and discuss the expression and functions of neurotrophins and their specific receptors based on recent data using cultured cells from human periodontal tissues. Neurotrophins, nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), and neurotrophin-3 (NT-3) play crucial roles in the differentiation and survival of neural cells. Neurotrophins activate 2 different receptor classes: the tropomyosin-related kinase (Trk) family of receptor tyrosine kinases (TrkA, TrkB, and TrkC) and the p75 receptor, a member of the tumor necrosis factor receptor superfamily. Neurotrophins regulate both cell death and cell survival through activations of Trk receptors and/or p75 neurotrophin receptor. It has been reported that neurotrophins are also produced from non-neuronal cells, such as leukocytes, osteoblasts, or fibroblasts, and act in many other ways on non-neuronal cells. Neurotrophin expression during bone fracture healing is especially interesting, and neurotrophins are now implicated in hard tissue regeneration. It is well known that neurotrophins and their receptors are expressed in tooth development. Recent studies have found that neurotrophins and Trk receptors are expressed in mouse osteoblastic cell lines. Human periodontal ligament cells, human gingival fibroblasts, and human gingival keratinocytes expressed mRNA for NGF and TrkA. The secretion of bioactive NGF peptides from human periodontal ligament cells and human gingival keratinocytes was confirmed by bioassay using PC12 cells (rat adrenal pheochromocytoma cells). The expression of NGF and TrkA.mRNA was regulated by interleukin (IL)-1beta. NGF increased DNA synthesis and

expressions of mRNA for bone-related proteins, alkaline phosphatase, and osteopontin in human periodontal ligament cells. Neurotrophins and Trk receptors expressed in human periodontal tissue may contribute to regeneration as well as innervation of periodontal tissue through local autocrine and paracrine pathways. Recent data suggest that some functions of neurotrophins and Trk receptors relate to periodontal disease and periodontal tissue regeneration. However, in vivo studies will be required to clarify the roles of neurotrophins and their receptors, including p75, in periodontal disease and periodontal tissue regeneration.

=> dis ibib abs 128 1-3

YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

L28 ANSWER 1 OF 3 MEDLINE on STN DUPLICATE 1
 ACCESSION NUMBER: 2008714203 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 18980528
 TITLE: Effect of neurotrophin-4/5 on bone/cementum-related protein expressions and DNA synthesis in cultures of human periodontal ligament cells.
 AUTHOR: Mizuno Noriyoshi; Shiba Hideki; Inui Takafumi; Takeda Katsuhiro; Kajiya Mikihiro; Hasegawa Naohiko; Kawaguchi Hiroyuki; Kurihara Hidemi
 CORPORATE SOURCE: Department of Periodontal Medicine, Hiroshima University Graduate School of Biomedical Sciences, Hiroshima, Japan.. mizuno@hiroshima-u.ac.jp
 SOURCE: Journal of periodontology, (2008 Nov) Vol. 79, No. 11, pp. 2182-9. Journal code: 8000345. ISSN: 0022-3492.
 PUB. COUNTRY: United States
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
 LANGUAGE: English
 FILE SEGMENT: Dental Journals; Priority Journals
 ENTRY MONTH: 200902
 ENTRY DATE: Entered STN: 5 Nov 2008 Last Updated on STN: 15 Feb 2009 Entered Medline: 12 Feb 2009

AB BACKGROUND: We studied neurotrophins (NTs) as signaling molecules for periodontal tissue regeneration and showed that nerve growth factor (NGF) and brain-derived neurotrophic factor (BDNF) modulate the proliferation and differentiation of human periodontal ligament (HPL) cells in vitro. The purpose of this study was to investigate whether NT-4/5 also has the ability to regulate the function of HPL cells. METHODS: mRNA expressions of NT-4/5 and its high-affinity tyrosine kinase receptor (trkB) were analyzed in HPL cells by reverse transcription-polymerase chain reaction. We examined how NT-4/5 regulates the mRNA expression of bone/cementum-related proteins (alkaline phosphatase [ALPase], osteopontin [OPN], osteocalcin [OC], and bone morphogenetic protein [BMP]-2) in cultures of HPL cells. Moreover, the effects of NT-4/5 on calcification, the production of OPN and OC, and DNA synthesis in HPL cells were examined. RESULTS: NT-4/5 and trkB mRNA were expressed in HPL cells. NT-4/5 elevated the mRNA levels of ALPase, OPN, OC, and BMP-2 and the syntheses of OPN, OC, and DNA in HPL cells. PD98059, an extracellular signal-regulated kinase (ERK) inhibitor, obviated the increase in the mRNA levels of ALPase, OPN, OC, and BMP-2. NT-4/5 increased the levels of phosphorylated ERK1/2. Furthermore, NT-4/5

enhanced the amount of mineral deposits in cultures of HPL cells.
 CONCLUSION: NT-4/5, as well as BDNF and NGF, is suggested to play a role
 in the regulation of function of periodontal ligament cells.

L28 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:259902 CAPLUS
 DOCUMENT NUMBER: 142:303690
 TITLE: Remedy and therapeutic method for periodontal
 diseases and pulpal diseases with neurotrophic
 factors
 INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda,
 Katsuhiro; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino,
 Hiroshi; Hasegawa, Naohiko; Shinohara,
 Hiroaki
 PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan
 SOURCE: PCT Int. Appl., 86 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2004271843	A1	20050324	AU 2004-271843	20040908
EP 1671641	A1	20060621	EP 2004-787706	20040908
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK			
CN 1871024	A	20061129	CN 2004-80031194	20040908
RU 2336089	C2	20081020	RU 2006-111465	20040908
US 20070071693	A1	20070329	US 2006-571069	20061207
PRIORITY APPLN. INFO.:			JP 2003-316719	A 20030909
			WO 2004-JP13023	W 20040908

AB It is intended to provide a remedy and a therapeutic method for periodontal diseases and pulpal diseases, a transplantation material for regenerating a periodontal tissue and a method of regenerating a periodontal tissue. Namely, a remedy for periodontal diseases and pulpal diseases comprising a neurotrophic factor as the active ingredient. The effect of brain-derived neurotrophic factor (BDNF) on cultured human periodontal ligament cell and human gingival keratinocyte was examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 3 OF 3 MEDLINE on STN DUPLICATE 2
 ACCESSION NUMBER: 2005583578 MEDLINE
 DOCUMENT NUMBER: PubMed ID: 16259615
 TITLE: Brain-derived neurotrophic factor enhances
 periodontal tissue regeneration.

AUTHOR: Takeda Katsuhiko; Shiba Hideki; Mizuno Noriyoshi;
Hasegawa Naohiko; Mouri Yoshihiro; Hirachi Akio;
CORPORATE SOURCE: Yoshino Hiroshi; Kawaguchi Hiroyuki; Kurihara Hidemi
Department of Periodontal Medicine, Division of Frontier
Medical Science, Hiroshima University Graduate School of
Biomedical Sciences, Hiroshima, Japan.
SOURCE: Tissue engineering, (2005 Sep-Oct) Vol. 11, No. 9-10, pp.
1618-29.
Journal code: 9505538. ISSN: 1076-3279.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200512
ENTRY DATE: Entered STN: 3 Nov 2005
Last Updated on STN: 23 Dec 2005
Entered Medline: 22 Dec 2005

AB To address whether brain-derived neurotrophic factor (BDNF)
could be involved in periodontal tissue regeneration, we
examined the effects of BDNF on proliferation and the expression of bone
(cementum)- related proteins (osteopontin, bone morphogenetic protein
[BMP]-2, type I collagen, alkaline phosphatase [ALPase], and osteocalcin)
in cultures of human periodontal ligament (HPL) cells, which are
thought to be prerequisite for periodontal tissue regeneration,
and on proliferation and angiogenesis in human endothelial cells.
Furthermore, we examined the effect of BDNF on the regeneration of
periodontal tissues in experimentally induced periodontal
defects in dogs. BDNF elevated the expression of ALPase and osteocalcin
mRNAs and increased the synthesis of osteopontin, BMP-2, and type I
collagen DNA in HPL cells. BDNF stimulated mRNA expression of vascular
endothelial growth factor-B and tenascin-X, and proliferation and
angiogenesis in human endothelial cells. In vivo studies showed that BDNF
stimulated the formation of new alveolar bone cementum and connective new
fibers, which were inserted into the newly formed cementum and bone. BDNF
also stimulated blood capillary formation. These findings suggest that
the regulation of functioning of periodontal ligament cells and
endothelial cells by BDNF results in the promotion of periodontal
tissue regeneration.

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YOU HAVE REQUESTED DATA FROM FILE 'MEDLINE, CAPLUS' - CONTINUE? (Y)/N:y

L32 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:259902 CAPLUS
DOCUMENT NUMBER: 142:303690
TITLE: Remedy and therapeutic method for periodontal
diseases and pulpal diseases with neurotrophic
factors
INVENTOR(S): Kurihara, Hidemi; Kawaguchi, Hiroyuki; Takeda,
Katsuhiko; Shiba, Hideki; Mizuno, Noriyoshi; Yoshino,
Hiroshi; Hasegawa, Naohiko; Shinohara, Hiroaki
PATENT ASSIGNEE(S): Two Cells Co. Ltd., Japan
SOURCE: PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005025605	A1	20050324	WO 2004-JP13023	20040908
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2004271843	A1	20050324	AU 2004-271843	20040908
EP 1671641	A1	20060621	EP 2004-787706	20040908
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK			
CN 1871024	A	20061129	CN 2004-80031194	20040908
RU 2336089	C2	20081020	RU 2006-111465	20040908
US 20070071693	A1	20070329	US 2006-571069	20061207
PRIORITY APPLN. INFO.:			JP 2003-316719	A 20030909
			WO 2004-JP13023	W 20040908

AB It is intended to provide a remedy and a therapeutic method for periodontal diseases and pulpal diseases, a transplantation material for regenerating a periodontal tissue and a method of regenerating a periodontal tissue. Namely, a remedy for periodontal diseases and pulpal diseases comprising a neurotrophic factor as the active ingredient. The effect of brain-derived neurotrophic factor (BDNF) on cultured human periodontal ligament cell and human gingival keratinocyte was examined

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 2 OF 2 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003081727 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12593600
TITLE: Neurotrophins in cultured cells from periodontal tissues.
AUTHOR: Kurihara Hidemi; Shinohara Hiroaki; Yoshino Hiroshi; Takeda Katsuhiko; Shiba Hideki
CORPORATE SOURCE: Department of Periodontal Medicine, Division of Frontier Medical Science, Hiroshima University Graduate School of Biomedical Science, Hiroshima, Japan..
hkuri@hiroshima-u.ac.jp
SOURCE: Journal of periodontology, (2003 Jan) Vol. 74, No. 1, pp. 76-84. Ref: 67
Journal code: 8000345. ISSN: 0022-3492.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 200305
ENTRY DATE: Entered STN: 21 Feb 2003
Last Updated on STN: 8 May 2003
Entered Medline: 7 May 2003

AB We review the basic functions of neurotrophins and their receptors and discuss the expression and functions of neurotrophins and their specific receptors based on recent data using cultured cells from human periodontal tissues. Neurotrophins, nerve growth factor (NGF), brain-derived neurotrophic factor (BDNF), and neurotrophin-3 (NT-3) play crucial roles in the differentiation and survival of neural cells. Neurotrophins activate 2 different receptor classes: the tropomyosin-related kinase (Trk) family of receptor tyrosine kinases (TrkA, TrkB, and TrkC) and the p75 receptor, a member of the tumor necrosis factor receptor superfamily. Neurotrophins regulate both cell death and cell survival through activations of Trk receptors and/or p75 neurotrophin receptor. It has been reported that neurotrophins are also produced from non-neuronal cells, such as leukocytes, osteoblasts, or fibroblasts, and act in many other ways on non-neuronal cells. Neurotrophin expression during bone fracture healing is especially interesting, and neurotrophins are now implicated in hard tissue regeneration. It is well known that neurotrophins and their receptors are expressed in tooth development. Recent studies have found that neurotrophins and Trk receptors are expressed in mouse osteoblastic cell lines. Human periodontal ligament cells, human gingival fibroblasts, and human gingival keratinocytes expressed mRNA for NGF and TrkA. The secretion of bioactive NGF peptides from human periodontal ligament cells and human gingival keratinocytes was confirmed by bioassay using PC12 cells (rat adrenal pheochromocytoma cells). The expression of NGF and TrkA.mRNA was regulated by interleukin (IL)-1beta. NGF increased DNA synthesis and expressions of mRNA for bone-related proteins, alkaline phosphatase, and osteopontin in human periodontal ligament cells. Neurotrophins and Trk receptors expressed in human periodontal tissue may contribute to regeneration as well as innervation of periodontal tissue through local autocrine and paracrine pathways. Recent data suggest that some functions of neurotrophins and Trk receptors relate to periodontal disease and periodontal tissue regeneration. However, in vivo studies will be required to clarify the roles of neurotrophins and their receptors, including p75, in periodontal disease and periodontal tissue regeneration.

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ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:y

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 L26 27 SEA FILE=MFE SPE=ON ABB=ON PLU=ON L25 AND PERIODON?
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 L29 3603 SEA FILE=MFE SPE=ON ABB=ON PLU=ON SHINOHARA H?/AU
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-6.56

STN INTERNATIONAL LOGOFF AT 10:26:06 ON 10 JUN 2009